The Role of Socioeconomic Data in Designing and Evaluating MPA Networks – California's Marine Life Protection Act Initiative Process

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Start Where You Are: Building Marine Protected Area Networks

June 22, 2010 - Tiburon, CA

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Outline

- Background – socioeconomic data needs

- General approach – socioeconomic data collection

- Use in the MPA design and evaluation process

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Socioeconomic Data Needs

- Comprehensive data that represents the spatial use patterns and values of commercial and recreational fisheries does not exist

  - Need data for planning (stakeholders) and evaluation (SAT)

- Contracted by the MLPA Initiative to:

  - Collect socioeconomic data and characterize the spatial extent and relative importance for commercial and recreational fishing (use and values) – data used by the **regional stakeholder group(s) to inform their MPA design process**

  - Data collected is used to evaluate the potential economic impacts of MPA proposals developed by the regional stakeholders

  - So, how do we do this….

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General Approach

- Conduct outreach - build relationships and trust within the fishing community

- Use computer-based map interface to administer survey and collect data — OceanMap — desktop and online

- Ask fishermen to map the extent and stated importance of their fishing grounds

- Summarize fishermen's knowledge while protecting confidentiality – reviewed by the fishing community

- Data is then used by the stakeholders to inform the design of their MPA proposals

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General Approach – Survey Design

- Identify key fisheries in the region

    – Differentiate in terms of practices (target strategy) and/or gear configurations (e.g., lobster-trap, urchin-diving, spot prawn-trap, wetfish-seine)

- Stratified study area into geographic regions or port complexes

    – Santa Barbara, Ventura, Port Hueneme, San Pedro, Dana Point, Oceanside, San Diego

- At least 50% of the total landings and/or ex-vessel revenue from 2000-2008 by fishery, gear type, and port complex

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General Approach – Data Collection

- All interviews follow the same protocol for each fishery the interviewee participates in:

    – Fishermen identify all fishing areas/locations that are of economic importance over their cumulative fishing experience

    – Fishermen rank these areas using a weighted percentage — an imaginary "bag of 100 pennies" that they distribute over the fishing grounds

    – Non-spatial information pertaining to demographics and basic operations will also be collected

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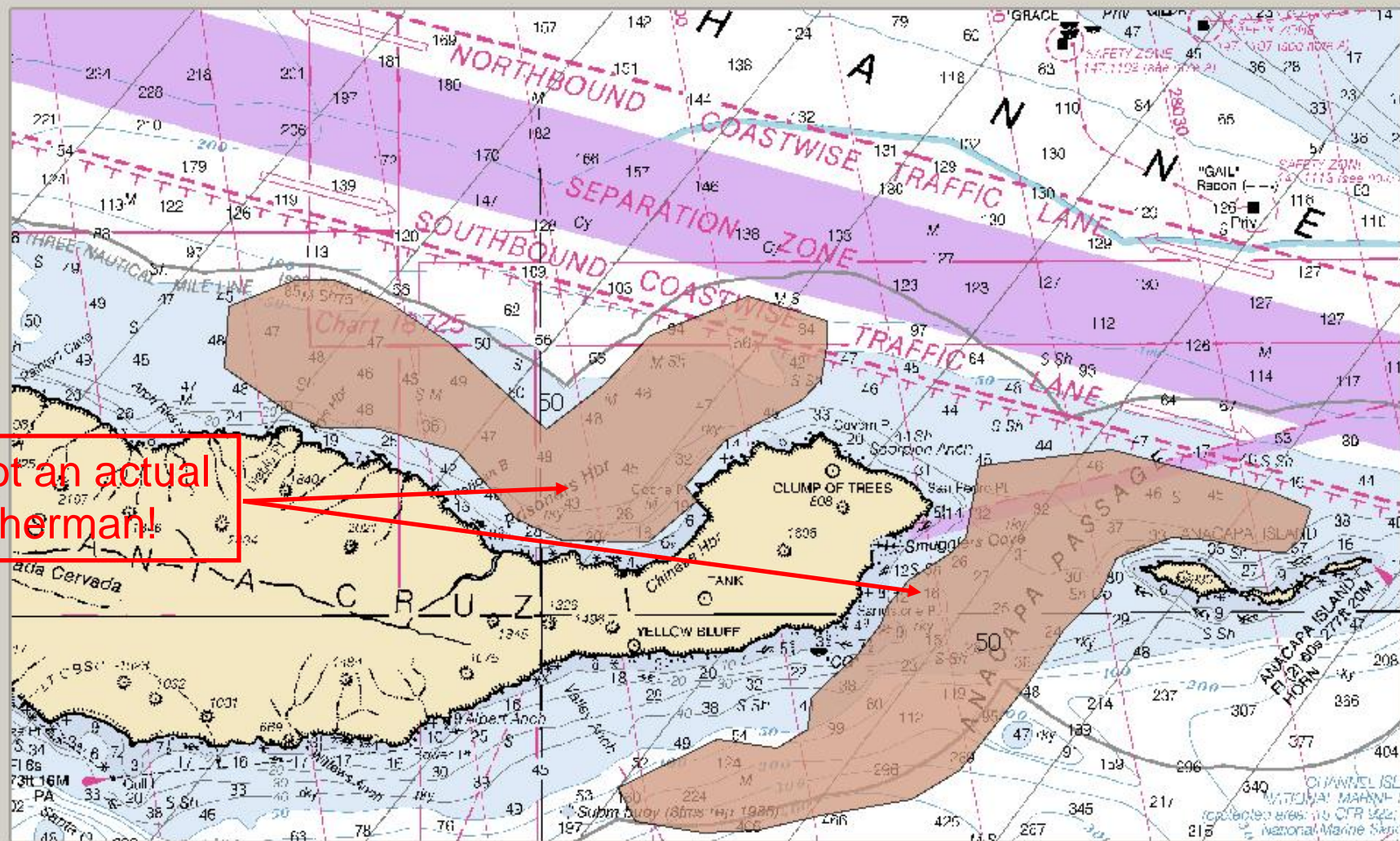
MPA Design and Evaluation

- Produce sets of maps for each fishery, which are used by stakeholders to assist in the design of MPA proposals
    - One map for the entire study region
    - Maps specific to each port in which the fishery occurs
- With each iteration of the MPA proposal design process, we evaluate
    - The potential impacts on the commercial, CPFV (charter), and recreational fishing grounds
    - Conduct an economic impact analysis on commercial and CPFV (charter) fisheries

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Commercial Dungeness Crab Grounds in the North Central California Coast Study Region

MLPA Initiative - North Central Coast Study Region Fisheries Uses and Values Project - Data Analysis Preliminary Results

Commercial Dungeness Crab Fishing Grounds

Proportion of total relative importance
weighted by ex-vessel revenue

Low

High
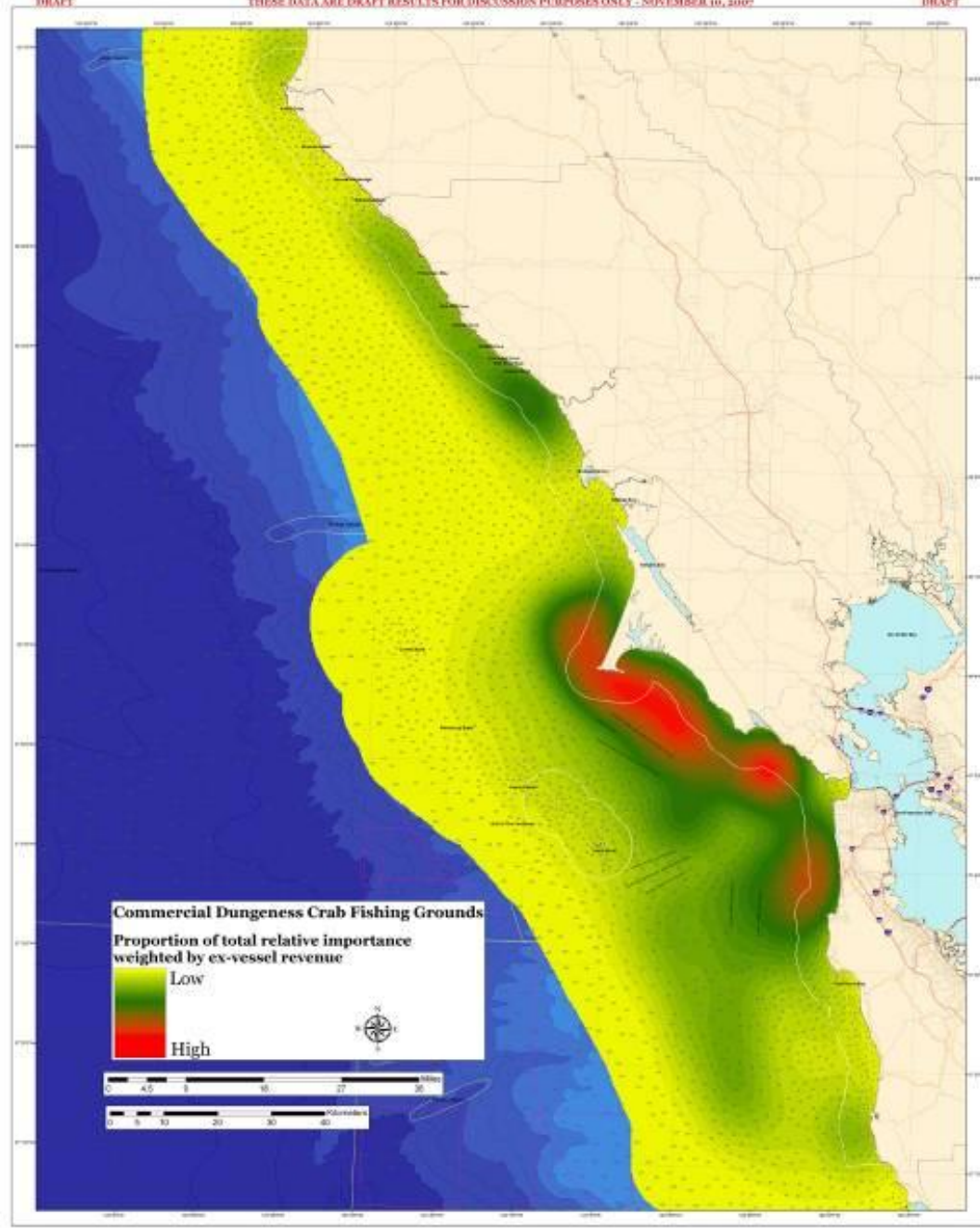
Commercial Dungeness Crab Grounds in the North Central California Coast Study Region
Bodega Bay Area Ports

MLPA Initiative - North Central Coast Study Region Fisheries Uses and Values Project - Data Analysis Preliminary Results

Commercial Dungeness Crab Fishing Grounds

Proportion of total relative importance weighted by ex-vessel revenue
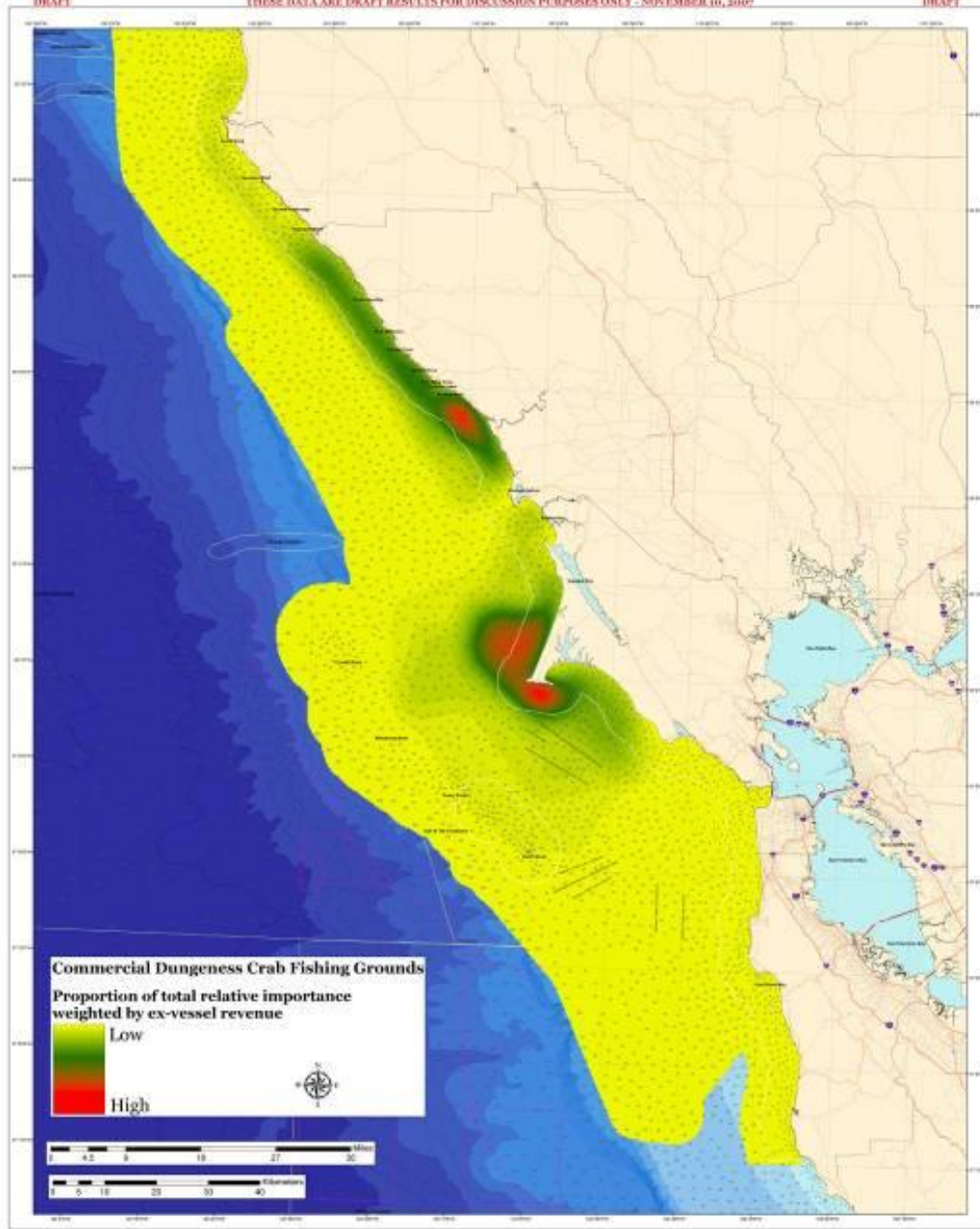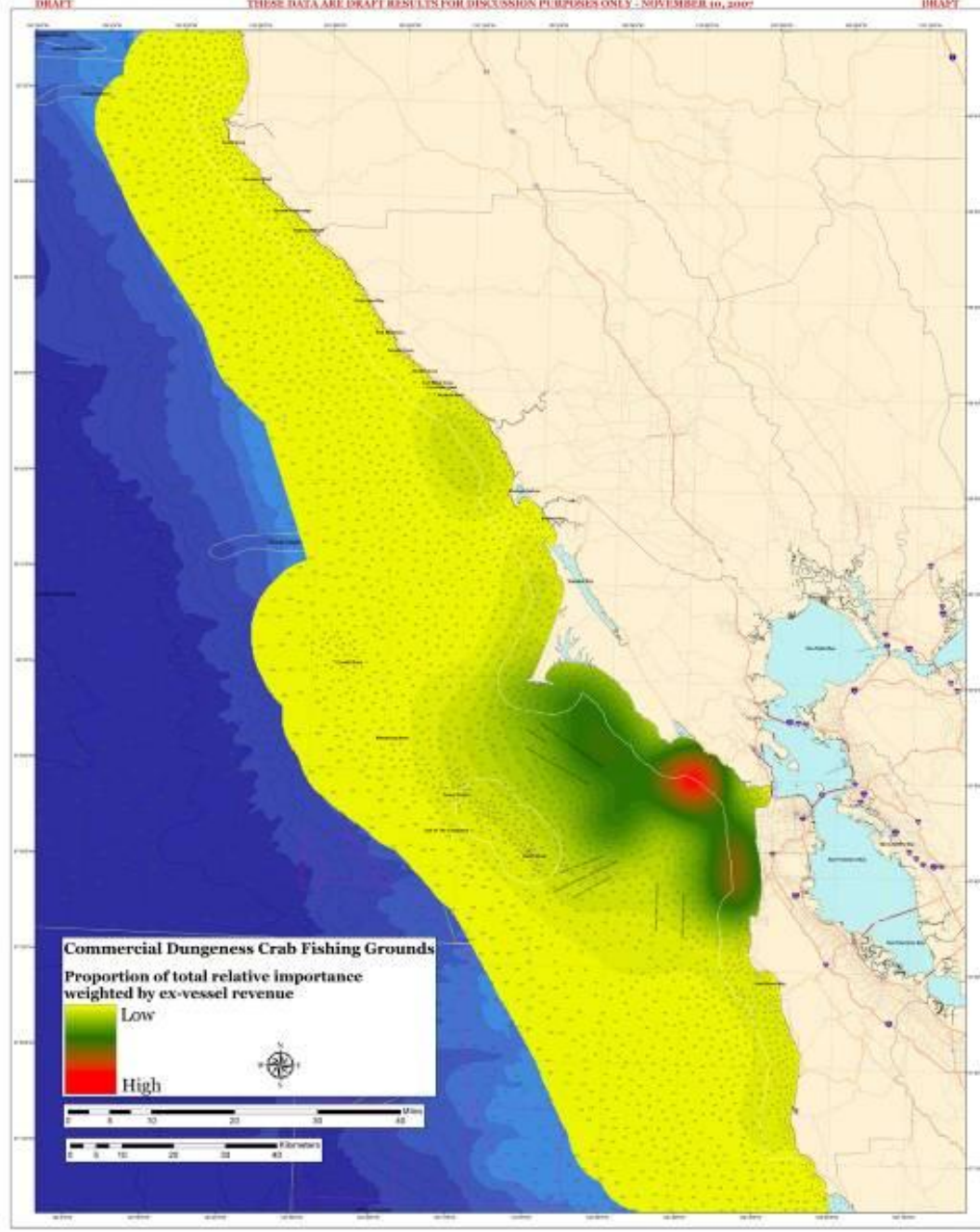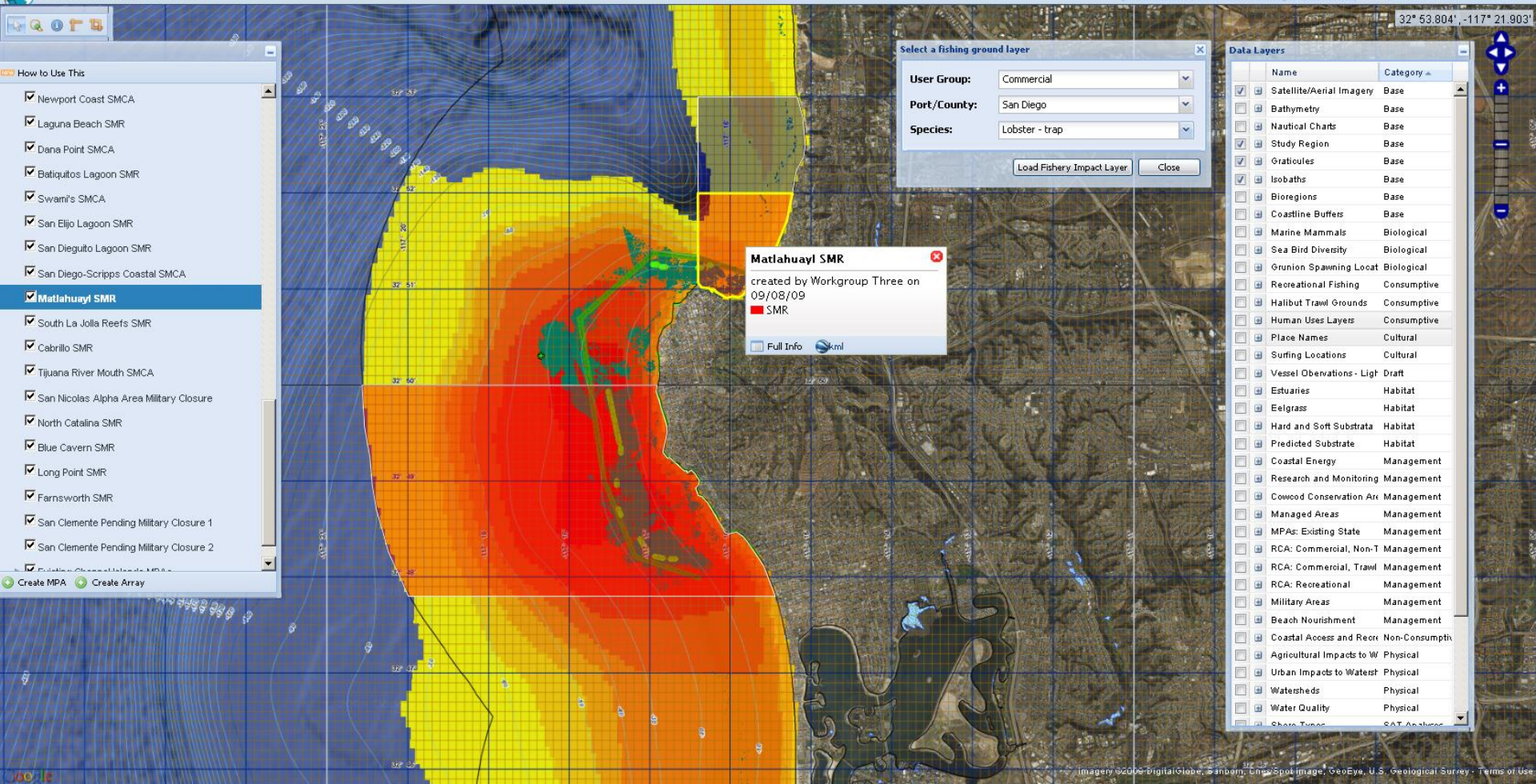
Low

High

Commercial Dungeness Crab Grounds in the North Central California Coast Study Region
San Francisco Area Ports
MLPA Initiative - North Central Coast Study Region Fisheries Uses and Values Project - Data Analysis Preliminary Results

Commercial Dungeness Crab Fishing Grounds

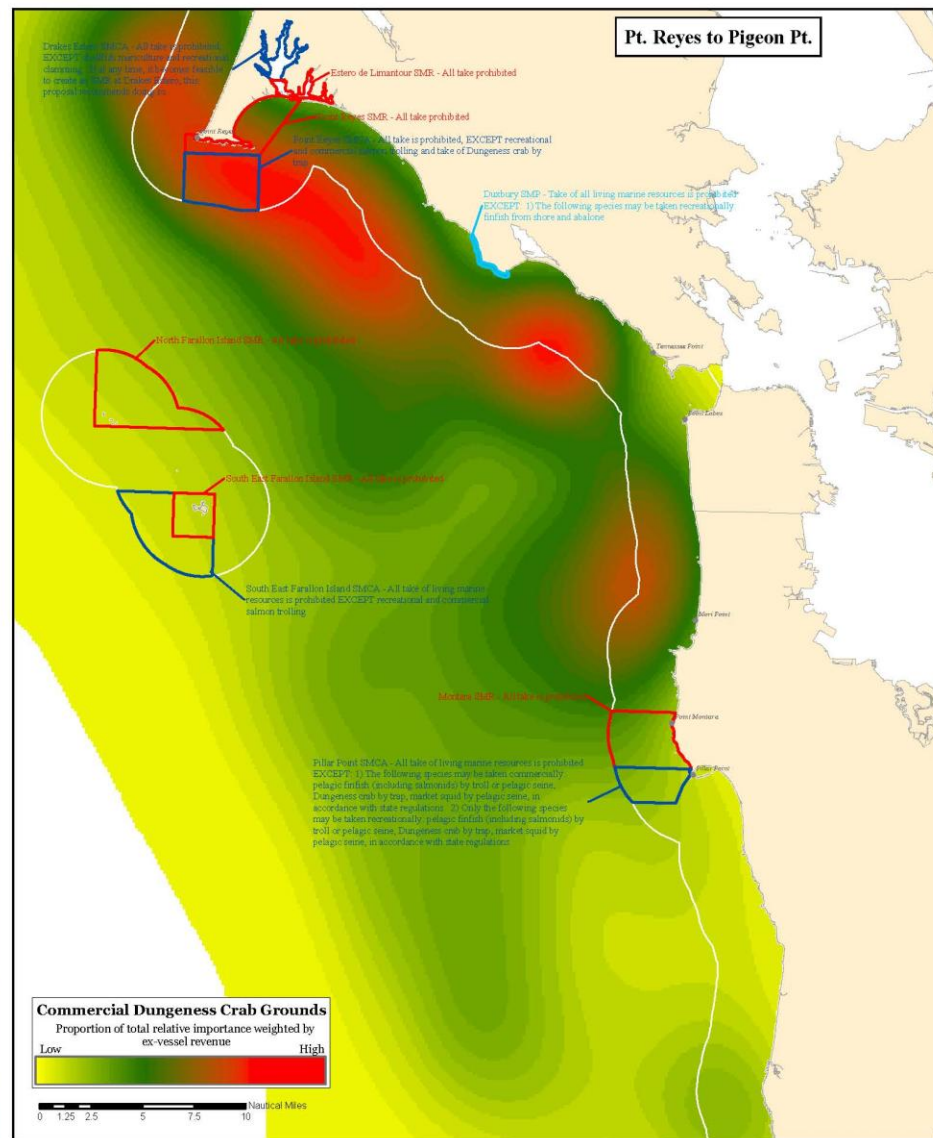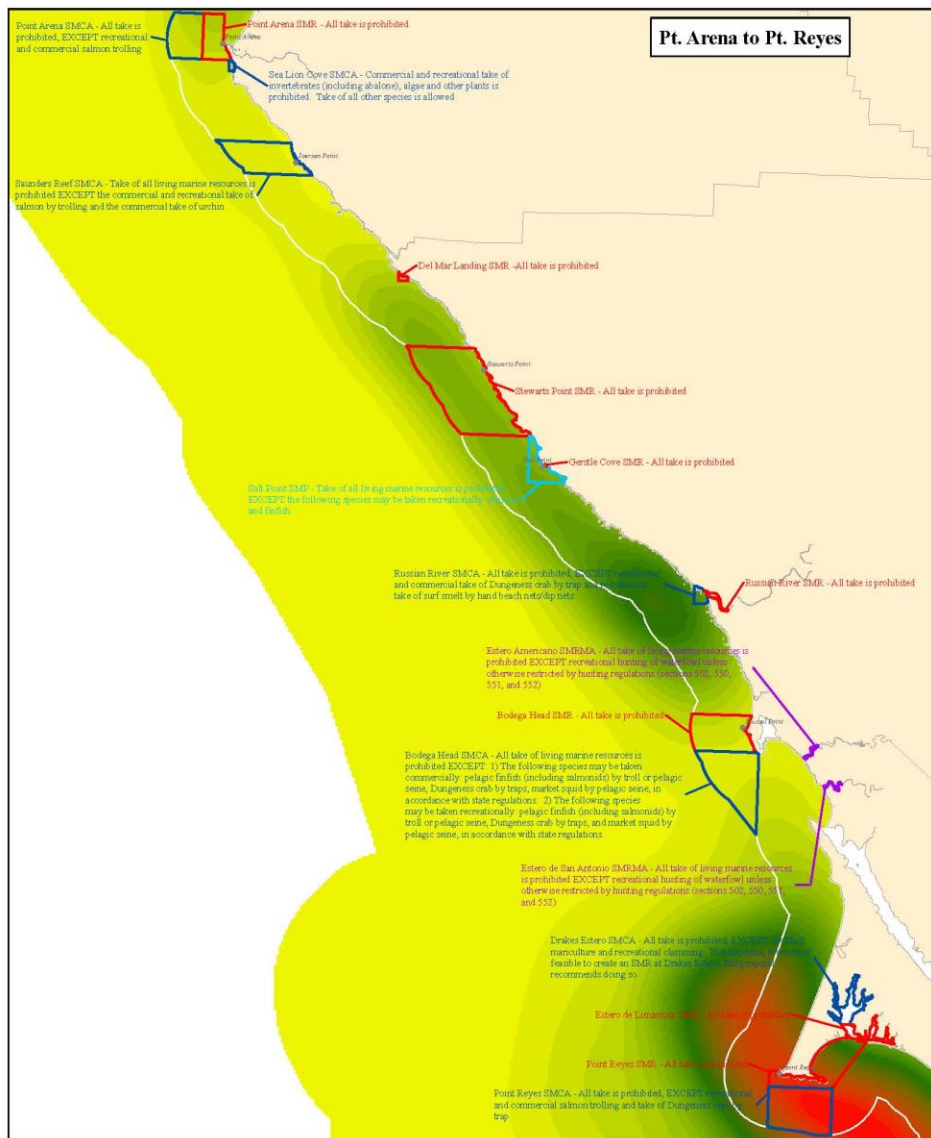Proportion of total relative importance
weighted by ex-vessel revenue

Low

High

MLPA North Central Coast, Integrated Preferred Alternative MPA Proposal Compared to Study Region Commercial Dungeness Crab Grounds**

Pt. Arena to Pt. Reyes

Point Arena SMCA - All take is prohibited, EXCEPT recreational and commercial salmon trolling

Point Arena SMR - All take is prohibited

Sea Lion Cove SMCA - Commercial and recreational take of invertebrates (including abalone), algae and other plants is prohibited. Take of all other species is allowed

Saunders Reef SMCA - Take of all living marine resources is prohibited EXCEPT the commercial and recreational take of salmon by trolling and the commercial take of urchin

Del Mar Landing SMR - All take is prohibited

Stewarts Point SMR - All take is prohibited

Gerstle Cove SMR - All take is prohibited

Salt Point SMR - Take of all living marine resources is prohibited EXCEPT the following species may be taken recreationally: salmon and finfish

Russian River SMCA - All take is prohibited EXCEPT recreational and commercial take of Dungeness crab by trap and the recreational take of surf smelt by hand beach nets/dip nets

Russian River SMR - All take is prohibited

Estero Americano SMRMA - All take of living marine resources is prohibited EXCEPT recreational hunting of waterfowl unless otherwise restricted by hunting regulations (sections 502, 550, 551, and 552)

Bodega Head SMR - All take is prohibited

Bodega Head SMCA - All take of living marine resources is prohibited EXCEPT: 1) The following species may be taken commercially: pelagic finfish (including salmonids) by troll or pelagic seine, Dungeness crab by traps, market squid by pelagic seine, in accordance with state regulations. 2) The following species may be taken recreationally: pelagic finfish (including salmonids) by troll or pelagic seine, Dungeness crab by traps, and market squid by pelagic seine, in accordance with state regulations

Estero de San Antonio SMRMA - All take of living marine resources is prohibited EXCEPT recreational hunting of waterfowl unless otherwise restricted by hunting regulations (sections 502, 550, 551, and 552)

Drakes Estero SMCA - All take is prohibited, EXCEPT shellfish mariculture and recreational clamming. If it becomes feasible to create an SMR at Drakes Estero, this proposal recommends doing so

Estero de Limantour SMR - All take is prohibited

Point Reyes SMR - All take is prohibited

Point Reyes SMCA - All take is prohibited, EXCEPT recreational and commercial salmon trolling and take of Dungeness crab by trap

Pt. Reyes to Pigeon Pt.

Drakes Estero SMCA - All take is prohibited, EXCEPT shellfish mariculture and recreational clamming. If it becomes feasible to create an SMR at Drakes Estero, this proposal recommends doing so

Estero de Limantour SMR - All take prohibited

Estero de Limantour SMR - All take prohibited

Point Reyes SMCA - All take is prohibited, EXCEPT recreational and commercial salmon trolling and take of Dungeness crab by trap

Duxbury SMR - Take of all living marine resources is prohibited EXCEPT: 1) The following species may be taken recreationally: finfish from shore and abalone

North Farallon Island SMR - All take is prohibited

South East Farallon Island SMR - All take is prohibited

South East Farallon Island SMCA - All take of living marine resources is prohibited EXCEPT recreational and commercial salmon trolling

Montara SMR - All take is prohibited

Pillar Point SMCA - All take of living marine resources is prohibited EXCEPT: 1) The following species may be taken commercially: pelagic finfish (including salmonids) by troll or pelagic seine, Dungeness crab by trap, market squid by pelagic seine, in accordance with state regulations. 2) Only the following species may be taken recreationally: pelagic finfish (including salmonids) by troll or pelagic seine, Dungeness crab by trap, market squid by pelagic seine, in accordance with state regulations

Commercial Dungeness Crab Grounds
Proportion of total relative importance weighted by ex-vessel revenue

Low — High

Nautical Miles
0   1.25 2.5   5   7.5   10

** North Central Coast Integrated Preferred Alternative - April 24, 2008. Commercial fishing grounds identified through local knowledge interviews, summer 2007. Scholz, et al. 2008. Commercial and recreational fishing grounds and their relative importance off the North Central Coast of California (Draft).

MPA Design and Evaluation

	Commercial	Commercial Passenger Fishing Vehicle (CPFV)	Recreational
# of fisheries	15 species	10 species	17 species
Level of analysis	65 port-fishery combinations	80 port-fishery combinations	Results reported by user group (private boat, kayak, dive/spear) and by county

	Commercial	CPFV	Recreational
Potential impacts on fishing grounds (area and value)	X	X	X
Potential net economic impacts	X	X	
Potential gross economic impacts	X		

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Net Economic Impacts (Commercial)
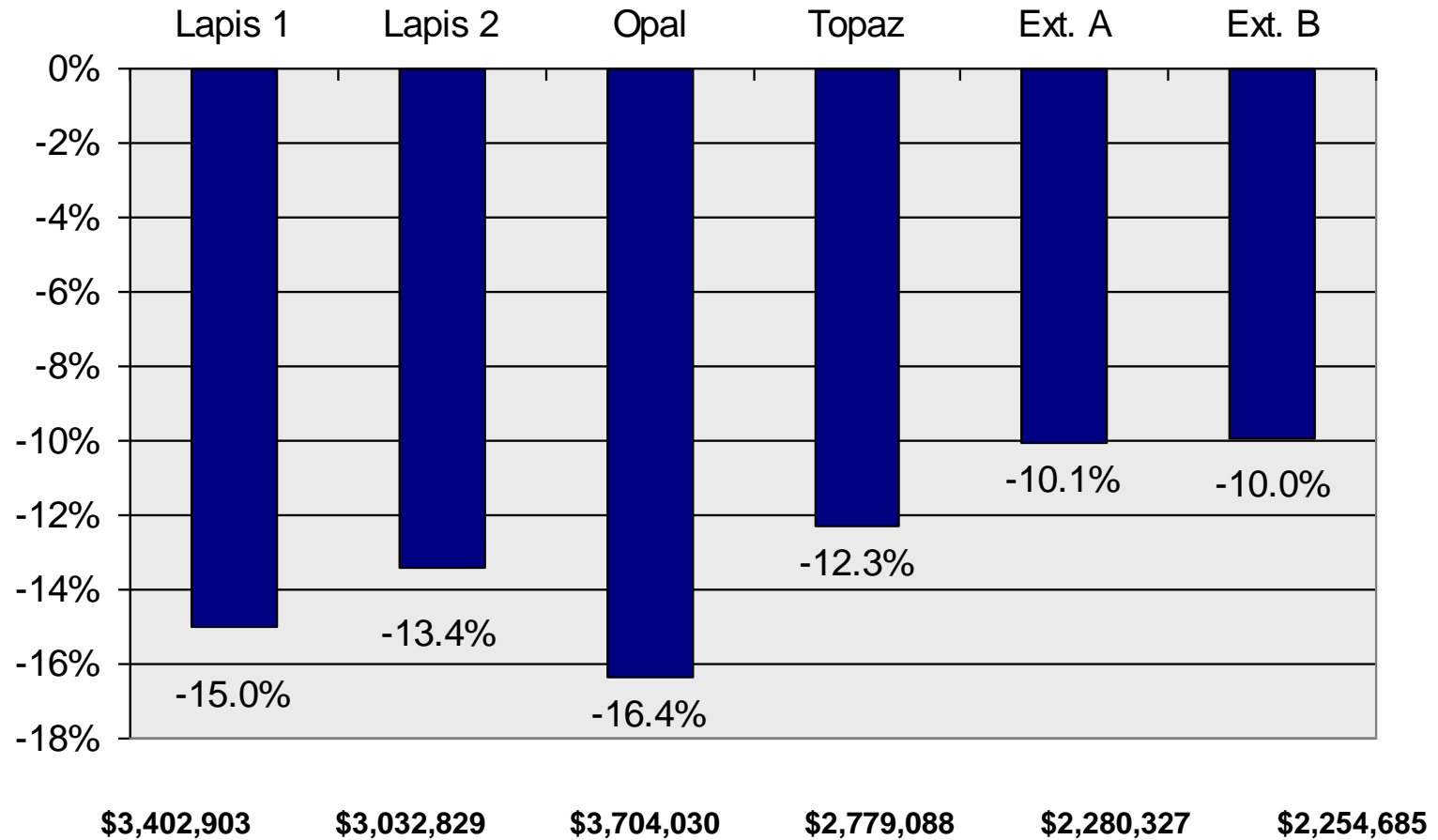
Maximum Potential Net Economic Impact (Reduction in Profit)

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Moving Forward and Lessons Learned

- Challenges and opportunities moving forward

  – Monitoring

- Lessons Learned

  – Engage the fishing community (and non-fishing community) early and often throughout the process (well before, during, and even after)

  – Confidentiality – take every measure possible to protect information during and after interview

  – Building relationships – do what you say

  – Collect data that is scale appropriate, port-level

  – Fishing community = wealth of knowledge

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